

1-14. (CANCELED)

15. (NEW) A method for determining a rotation speed and a rotation direction of a component (2), in particular a transmission output shaft, with a sensor device (1), in which a first sensor signal (I) and a second sensor signal (II) are generated as a function of a rotation speed and rotation direction of the component (2), the first and second sensor signals being phase shifted relative to one another and which, whenever the first and second sensor reach one of an upper switching threshold (s_o) or a lower switching threshold (s_u), trigger a switching signal in the sensor device (1), such that whenever there are alternating and consecutive switching signals of the first and second sensor signals (I, II), a pulse signal is emitted as a function of which a variation of a sensor output signal is generated, which is used to determine a rotation speed of the component, wherein when the component (2) reverses rotation direction a pulse signal of the sensor device (1) is only generated when a rotation movement of the component (2) is recognized, the rotation movement of the component (2) being sensed when, in alternation, a switching signal of one of the first and second sensor signals (I, II) and after it a switching signal of the other first and second sensor signals (II) occur.

16. (NEW) The method according to claim 15, wherein a rotation direction reversal of the component (2) is characterized by two consecutive switching signals of one of the first and second sensor signals (I or II) without any switching signal of the respective other second and first sensor signals (II or I) occurring in the time interval between them.

17. (NEW) The method according to claim 15, wherein the first and second sensor signals (I, II) have continuous, at least approximately sinusoidal variations.

18. (NEW) The method according to claim 17, wherein an amplitude of the sensor signals (I, II) varies as a function of a distance (LS) between the sensor device (1) and an area of the component (2) sensed by the sensor device (1).

19. (NEW) The method according to claim 15, wherein the pulse signals generate a rectangular variation of the sensor output signal of the sensor device (1), such that a width of the rectangle corresponds to a pulse width (t_{pb}), a distance between two switching signals of the first and second sensor signals (I, II) each

generating a rectangular signal corresponds to a period duration (t_{pd}), and a height of the rectangles corresponds to a pulse height.

20. (NEW) The method according to claim 19, wherein a predefined value is assigned to the pulse width (t_{pb}).

21. (NEW) The method according to claim 19, wherein for each of the two rotation directions of the component (2), a respective predefined value (t_{pb_v} , t_{pb_r}) is assigned to the pulse width (t_{pb}).

22. (NEW) The method according to claim 19, wherein the pulse width (t_{pb}) varies as a function of the rotation speed of the component (2).

23. (NEW) The method according to claim 19, wherein the period duration (t_{pd}) varies as a function of a rotation speed of the component (2).

24. (NEW) The method according to claim 19, wherein to the pulse height is assigned, respectively, a predefined value (low, high_v, high_r) associated with one of the two rotation directions of the component.

25. (NEW) The method according to claim 19, wherein to the pulse height is assigned a predefined value (low, high) which is independent of the rotation speed and direction.

26. (NEW) The method according to claim 15, wherein at least one of the upper switching threshold (s_o) and the lower switching threshold (s_u) can be varied, preferably as a function of the distance (LS) between the sensor device (1) and the area (3) of the component (2) sensed during the operation of the sensor device (1).

27. (NEW) The method according to claim 15, wherein the upper switching threshold (s_o) and the lower switching threshold (s_u) are arranged at least approximately symmetrically about a zero transition of the sensor signals of the sensor device.

28. (NEW) The method according to claim 15, wherein The phase shift of the sensor signals of the sensor device (1) during a rotation of the component (2) amounts at least approximately to $p/2$.

29. (NEW) A method for determining a rotation speed and a rotation direction of a component (2), in particular a transmission output shaft, with a sensor device (1), the method comprising the steps of;

generating a first sensor signal (I) as a function of a rotation speed and a second sensor signal (II) as a function of rotation direction of the component (2),

phase shifting the first and second sensor signals relative to one another whenever the first and second sensor signals reach one of an upper switching threshold (s_o) or a lower switching threshold (s_u);

triggering a switching signal in the sensor device (1), such that when there are alternating and consecutive switching signals of the first and second sensor signals (I, II), a pulse signal is emitted as a function of which variation of a sensor output signal is generated, which is used to determine a rotation speed of the component; and

generating only a pulse signal of the sensor device (1) when the component (2) reverses rotational direction when a rotational movement of the component (2) is recognized, the rotational movement of the component (2) being sensed when, in alternation, a switching signal of one of the first and second sensor signals (I, II) and after it a switching signal of the other first and second sensor signals (II) occur.